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R E M A R K S

The Office Action issued March 9, 2010, has been received and its contents have been carefully noted.

Apparatus claims 5 - 20, previously withdrawn as being drawn to a non-elected invention, have been canceled. Only method claims 1, 2 and 4 remain in this application.

The applicants wish to thank the Examiner in charge of this application, Ms. Stella Yi, and her SPE, Ms. Christina Johnson, for the courtesy and cooperation they extended during the personal interview kindly granted applicants' undersigned attorney on June 8, 2010. During this interview, applicants' attorney presented samples of an aveolate sheet of the type referred to in the prior art EP 0 303 576 to Bressan ("Bressan") and a foam board of the type to which the present invention relates. Also, applicants' attorney pointed out that the thermoforming process disclosed in Bressan is a "two-step" process requiring a heating station 6 and a separate and subsequent cooling station 12, whereas

with applicants' method the heating and cooling of the web take place simultaneously.

A copy of applicants' corresponding European patent, with claims equivalent to the present method claims, is attached for the information of the Examiner.

In the outstanding Office Action, claims 1, 2 and 4 have again been rejected as being unpatentable over Bressan in view of the U.S. Patent No. 5,589,243 to Day ("Day"). This rejection is respectfully traversed for the reasons discussed at the personal interview and for the reasons given below.

As explained in applicants' prior Amendments dated February 26, 2009; July 10, 2009 and November 10, 2010, Bressan discloses a method of closing the edges of a "continuous, aveolate sheet or panel". This aveolate sheet is formed of thin solid plastic material comprising two side members maintained in separated, parallel relationship by intermediate cross members.

Applicants' "integral foam board" on the other hand, is formed of a plastic material having a "coarsely porous core" -- that is, a solid material with numerous tiny closed cell pores -- and side surfaces which are sealed and smoothed

during the manufacturing process to give them an attractive "shiny" finish.

The present invention relates to a method of smoothing and sealing the side edges of the plastic foam board. In the sample provided at the interview, only one such side edge had been subjected to this method.

According to claim 1, a side edge surface is smoothed while simultaneously cooling the main surfaces of the board on either side.

In particular, claim 1, states:

"heating the side edge of the plastic web in a guide groove of a smoothing device to at least a melting temperature of the thermoplastic synthetic material following calibration, while pressing the contact surface of the smoothing device against the side edge to smooth and densify the thermoplastic synthetic material, thereby to smooth and seal the side edge of the coarsely porous core while simultaneously maintaining adjacent peripheral surface areas of the plastic web in the smoothing device at a temperature below the softening temperature of the thermoplastic synthetic material by cooling."

Bressan not only relates to a different type of plastic sheet, but also calls for a two-step process of treating an edge.

The patent to Day, which the Examiner has combined with Bressan, discloses a rigid foam board of the type to which the present invention relates. However, Day teaches away from the applicants' method for smoothing and sealing a side edge.

In particular, as shown in Fig. 33, which is reproduced as the sample figure on the title page of the patent, the side surfaces 375 of the rigid, closed cell expanded foam board 370 are formed by "fiberglass skins" (Column 16, lines 23-33). A resin, which is preferably injected into the fiberglass skins, not only penetrates between the fibers of these skins but also between fibers of intermediate webs 372 that extend between the fiberglass surfaces 375.

The fiberglass surfaces 375 and the intermediate webs 372 thus form a structure much like that of an aveolate sheet -- a sheet which is filled with a rigid plastic foam.

Therefore, while Day does disclose plastic foam boards made of PVC, as described in Column 2, lines 33-36, these boards are sandwiched together with the absorptive fibrous web sheets to form laminated boards. Day fails to hint at the problem, or provide a solution to the problem, of porous edges which occur with an integrated foam board. In Column

7, lines 60-61, the passage cited by the Examiner, merely states that "when fibrous sheets 42 [sheets equivalent to side surfaces 375 in Fig. 33] are cut by a band saw, the cutting operation frays the longitudinal edges of the webs 62 [intermediate webs 372 in Fig. 33]." Thus it is the webs 62, not the porous core material, which is rough and unsightly. These frayed edges result only from the fibrous structure of the sheet material (fiberglass).

The problems resulting from the coarsely porous core of the integral foam board, as described on pages 1 and 2 of this application, are neither disclosed nor alleviated by the manufacturing process of Day.

Therefore, a person of ordinary skill in the art would have received no assistance from Day in smoothing the rough edges of a plastic porous foam board.

Conversely, the frayed edges of fibrous sheet material in a sandwich panel of the type disclosed by Day could not possibly be smoothed and sealed by the method according to the invention. This is because the flexible fiberglass sheet material cannot be smoothed and sealed by heating and cooling in the manner recited in applicants' claim 1.

Finally, if a person skilled in the art were to substitute the plastic porous foam as taught by Day for the thermoplastic material of Bressan, the result would be a reinforced sandwich panel made of a number porous plastic blocks, reinforced with a web of fibrous sheets. This structure would be completely different from the integral foam board of the present invention.

In summary, the patent to Day fails to mention the problems of sealing and smoothing the edges of an integral foam board. The panel disclosed by Day is coated with a separate "skin" to improve the strength and stability of the laminate (Column 8, lines 51-67). There is no hint or suggestion of smoothing the porous thermoplastic core itself.

Consequently, claim 1, as amended, is believed to distinguish patentably over both Bressan and Day. The allowance of this claim, as well as the allowance of dependent claims 2 and 4, are accordingly respectfully solicited.

Respectfully submitted,

By


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